

WE CLAIM:

1. An entryway system that can adjust a slab within a frame and maintain a sealed system to exterior weather when closed, the system comprising an entryway comprising:

(a) a frame comprising a peripheral weather strip having at a minimum a resilient weather strip positioned substantially on the entirety of both sides and the bottom of the frame, the frame bottom additionally comprising a threshold member joined to the frame with an end cap corner key positioned there between, the threshold forming a tank such that the threshold can accumulate and drain environmental water to the exterior of the frame; and

(b) a slab mounted on the frame with an adjustable hinge member, said hinge vertically and horizontally adjustable to sealingly match the slab periphery to the peripheral weather strip.

2. The entryway of claim 1 wherein the weather strip is positioned on the top of the frame.

3. The system of claim 1 wherein the weather strip is a V-shaped resilient weather strip wherein the base of the V-shaped weather strip acts as a hinge permitting sealing compression of the weather strip structure.

4. The system of claim 1 wherein the threshold comprises an extruded aluminum threshold having an drain exposed to the exterior, the threshold open ends sealed with the end cap corner key, the end cap corner key comprising sealing means to prevent water leakage from the ends of the threshold, flange means extending from the end cap corner key positioned to support a vertical member of the framing in the system and positioning means to ensure that the end cap corner key is correctly positioned on the hollow profile.

5. The system of claim 4 wherein the end cap corner key is sealed using a resilient seal.
6. The system of claim 4 wherein the seal comprises a polymeric elastomer.
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7. The system of claim 6 wherein the polymeric seal comprises a foamed polymeric seal.
8. The system of claim 1 wherein the hinge is horizontally adjustable using
10 a shim.
9. The system of claim 8 wherein hinge is adjusted by a shim in the door slab.
- 15 10. The system of claim 8 wherein hinge is adjusted by a shim in the jamb.
11. The system of claim 8 wherein hinge is adjusted by a mechanical adjustment in the hinge.
- 20 12. The system of claim 1 wherein the hinge comprises a two-knuckle hinge, the hinge is vertically adjustable.
13. The system of claim 12 wherein the two knuckle hinge has an upper knuckle and a lower knuckle, the upper knuckle being supported by a pin that is
25 adjustable in the vertical dimension.
14. The system of claim 13 wherein the adjustable pin can move through an adjustment range of about 0.2 to 10 mm.
- 30 15. The system of claim 13 wherein the adjustable pin can move through an adjustment range of about 0.5 to 5 mm.

16. A threshold structure for an entryway door, the structure comprising an
threshold assembly comprising a water drain system associated with a water tank, a
weather strip associated with a mounting means for the weather strip, an interior base
5 for a trim member, a trim member, the ends of the threshold assemblies sealed using a
corner key end cap structure and a threshold gasket positioned therebetween to maintain
the water tank integrity.

17. The threshold system of claim 16 wherein the threshold comprises
10 extruded aluminum.

18. The threshold system of claim 16 wherein the trim member comprises a
wooden member.

15 19. The threshold of claim 16 wherein the corner key end cap additionally
comprises an extended support means and attachment means for a side jamb framing
member.

20 20. The threshold of claim 16 wherein the water tank comprises a depth of
less than about 25 millimeters that can maintain a water head with a depth of less than
about 20 millimeters in response to a normal force from a wind velocity of 60 km-sec^{-1} .

25 21. The threshold of claim 16 wherein the sill gasket comprises a
thermoplastic.

22. The threshold of claim 16 wherein the sill gasket comprises a foamed sill
gasket.

30 23. The threshold of claim 16 wherein the interface between the corner key
end cap and the side jamb framing and the interface between the corner key end cap and
the threshold both contain sill gasket.

24. The threshold of claim 16 wherein the threshold comprises attachment means such that the corner key end cap can be assembled with the threshold and sill gasket using a fastener that interacts with the attachment means.

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25. The threshold of claim 16 wherein the corner key comprises positioning means such that the corner key is fixed at a single location on the threshold with the fastener.

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26. An adjustable hinge for an entryway door system, the adjustable hinge comprising:

(a) a shim assembly comprising a shim frame and at least one shim insert; and

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(b) a two knuckle hinge with an upper knuckle and a lower knuckle, the upper knuckle supported and hingedly mounted on a pin extending vertically from the lower knuckle, the pin having adjustment means in the vertical direction.

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27. The hinge of claim 26 wherein the shim has a thickness of at least 1 millimeter.

28. The hinge of claim 26 wherein the hinge system comprises a shim base and two or more shims.

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29. The hinge of claim 26 wherein the shim frame comprises a peripheral edge stop holding the shim within the frame.

30. The hinge of claim 26 wherein the hinge frame is a rectangular frame adapted for installation into a rectangular opening in a door frame structure.

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31. The hinge of claim 30 wherein the hinge frame has a thickness of about 1 to 3 millimeters.

5 32. The hinge system of claim 26 wherein the adjustable pin is adjustable through a range of about 0.1 to about 6 centimeters using a screw adjustment.

33. The hinge system of claim 26 wherein the adjustable screw driven by an Allen wrench.

10 34. A threshold system in an entryway system that can maintain a seal of an interior space to weather from an exterior, the threshold system comprising:

(a) threshold having a tank and a drain exposed to the exterior ;

(b) a jamb; and

(c) an end cap corner key positioned between the jamb and the

15 threshold, said jamb comprising sealing means between the end cap and the threshold that ensures integrity to a tank formed within the threshold sealed by the end cap;

20 wherein the end cap comprises a support extending from the end cap corner key that forms a barrier to the passage of environmental water into the jamb, said end cap further comprising an alignment tab that cooperates with threshold to ensure the appropriate installation of the end cap corner key.

25 35. The threshold system of claim 34 wherein the threshold comprises extruded aluminum.

36. The threshold system of claim 34 wherein the end cap corner key comprises one or more fastener apertures and the alignment tab cooperates with the tread surface of the threshold.

30 37. The threshold system of claim 34 wherein a gasket is placed between the end cap corner key and the threshold.

38. The threshold system of claim 34 wherein the end cap corner key comprises a molded sealant placed such that the molded sealant contacts an open end of the threshold to form a watertight seal.

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39. The threshold system of claim 34 wherein the end cap comprises a support extending beneath both the jamb and the threshold.

10 40. An entryway system that can adjust a slab within a frame and maintain a sealed system to exterior weather when closed, the system comprising an entryway comprising:

(a) a frame comprising a header, a threshold and at least one jamb in the peripheral frame; and

15 (b) a slab mounted on the frame, said slab comprising a mortised hinge installation location, said location comprising a shim and a hinge, the hinge adjustable in the vertical dimension, comprising a two knuckle hinge structure; wherein the frame comprises a threshold and a corner key, the threshold comprising a trim member, a water tank sealed by the end cap corner key using sealing means between the end cap corner key and the threshold.

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41. The system of claim 40 wherein the hinge is horizontally adjustable using a shim.

25 42. The system of claim 40 wherein the hinge is adjusted by a shim in the door slab.

43. The system of claim 40 wherein hinge is adjusted by a shim in the jamb.

30 44. The system of claim 40 wherein hinge is adjusted by a mechanical adjustment in the hinge, horizontally and/or vertically.

45. The threshold system of claim 16 wherein the threshold comprises aluminum.

46. The threshold system of claim 16 wherein the extruded trim member
5 comprises a wooden member.

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